

Proposed
Graduation Requirement
for
Bachelor of Technology
in
Electrical Engineering
(Batch - 2021)



Department of Electrical Engineering
College of Technology
G.B. Pant University of Agriculture and Technology,
Pantnagar (Uttarakhand)-263145
Year-wise Graduation Requirement
Batch 2021 (Electrical Engg.)

**PROPOSED GRADUATION REQUIREMENT FOR
B.TECH. (REGULAR) ELECTRICAL ENGINEERING
Batch-2021**

Sl. No.	Course No.	Course Title	Credit/ Contact Hours	Pre-requisite
Basic Sciences and Other Department courses				
1.	BPP-198	Semiconductor Physics	5(3-1-2)/6	Nil
	BPM-142	Calculus and Differential Equations	5(4-1-0)/5	Nil
	BPC-102	Chemistry-I	4 (3-0-2) /5	Nil
	TIP-103	Workshop Practices	3(1-0-2x2)/5	Nil
	TID/ TSW/ TCE/TME-109	Introduction to Environmental Engineering and Disaster Management	3(3-0-0)/3	Nil
	TCE-114	Engineering Graphics and Design	3(1-0-4)/5	Nil
	TIT-121	Programming for Problem Solving	4(3-0-2) /5	Nil
	BHS-186	English	3(2-0-2)/4	Nil
	BHS-188	Industrial Sociology	3(3-0-0)/3	Nil
	TIC-100	Induction Programme	2 Weeks	Nil
	TEE-104	Basic Electrical Engineering	5(3-1-2)/6	Nil
	BPM-152	Linear Algebra, Transform Calculus and Numerical Methods	4(3-1-0)/4	Nil
	TCT-202	Digital Electronics	4(3-0-2)/5	Nil
	TME-201	Engineering Mechanics	4(3-1-0)/4	Nil
	TEC-209	Signals and Systems	4(3-1-0)/4	Nil
	BPS-228	Probability and Statistics	4(3-1-0)/4	Nil
	BHS-286	Effective Technical Communication	3(3-0-0)/3	Nil
	BHS-387	Soft Skills	3(3-0-0)/3	Nil
	TEC-304	Analog and Digital Communication	3(3-0-0)/3	Nil
Professional Courses				
20.	TEE-201	Electrical Circuit Analysis	4(3-1-0)/4	Nil
21.	TEE-202	Analog Electronics	4(3-0-2)/5	Nil
22.	TEE-203	Measurements and Instrumentation	3(2-0-2)/4	Nil
23.	TEE-206	Electrical Machines I	3(2-1-0)/3	Nil
24.	TEE-207	Electromagnetic Fields	4(3-1-0)/4	Nil
25.	TEE-208	Microprocessors	4(3-0-2)/5	Nil
26.	TEE-209	Network Analysis and Synthesis	3(2-1-0)/3	Nil
27.	TEE-311	Power Electronics	4(3-0-2)/5	Nil
28.	TEE-312	Electrical machines II	4(2-1-2)/5	Nil
29.	TEE-314	Power Systems I	3(2-1-0)/3	Nil
30.	TEE-315	Electrical Materials	3(3-0-0)/3	Nil
31.	TEE-316	Control System I	4(3-0-2)/5	Nil
32.	TEE-317	Software Tools for Electrical Engineering Application	1(0-0-2)/2	Nil
33.	TEE-318	Power Systems II	3(3-0-0)/3	Nil
34.	TEE-319	Electrical machines III	5(3-1-2)/6	Nil
35.	TEE-320	Control System II	2(2-0-0)/2	Nil
36.	TEE-410	Power System III	4(3-0-2)/5	Nil

37.	TEE-411	Renewable Energy Systems	3(3-0-0)/3	Nil
38.	TEE-	Programme Elective 1	3 Credit	Nil
39.	TEE-	Programme Elective 2	3 Credit	Nil
40.	TEE-	Programme Elective 3	3 Credit	Nil
41.	TEE-	Programme Elective 4	3 Credit	Nil
42.	TEE-	Programme Elective 5	3 Credit	Nil
43.	TEE-	Programme Elective 6	3 Credit	Nil
44.		Open Elective 1	3 Credit	Nil
45.		Open Elective 2	3 Credit	Nil
46.		Open Elective 3	3 Credit	Nil
47.		Open Elective 4	3 Credit	Nil
Internship/ Seminar/ Projects and others.				
48.	TEE-191	Practical Training I	02 Weeks	Nil
49.	TEE-291	Practical Training II	02 Weeks	Nil
50.	TEE-391	Practical Training III	04 Weeks	Nil
51.	TEE-494	Seminar	1(0-0-2)/2	Nil
52.	TEE-495 A	Project I	4(0-0-4x2)/8	Nil
53.	TEE-495 B	Project II	8(0-0-8x2)/16	Nil
54.	TWP-101	Work Programme	1(0-0-3)/3	Nil
55.	NSS-101/ NCC-101	N.S.S. / N.C.C.	1 (0-0-4)	Nil
56.	NSS-102/ NCC-102	N.S.S. / N.C.C.	0 (0-0-4)	Nil
57.	NSS-201/ NCC-201	N.S.S. / N.C.C.	1 (0-0-4)	Nil
58.	NSS-202/ NCC-202	N.S.S. / N.C.C.	0 (0-0-4)	Nil
		Total Credits	174	

Note: Those students who have not taken Hindi at the High School or equivalent level will also require to Register the course BHS-173 Elementary Hindi – 2 Credit

**PROPOSED GRADUATION REQUIREMENT FOR
B.TECH. (REGULAR) ELECTRICAL ENGINEERING
Batch-2021
Semester Wise Distribution**

First Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	BPP-198	Semiconductor Physics	5(3-1-2)/6	Nil
2.	BPM-142	Calculus and Differential Equations	5(4-1-0)/5	Nil
3.	TCE-114	Engineering Graphics and Design	3(1-0-4)/5	Nil
4.	TID/ TSW/ TCE/TME-109	Introduction to Environmental Engineering and Disaster Management	3(3-0-0)/3	Nil
5.	BHS-186	English	3(2-0-2)/4	Nil
6.	TIP-103	Workshop Practices	3(1-0-2x2)/5	Nil
7.	TIC-100	Induction Programme (2 Weeks)		Nil
		II semester		
1.	BPC-102	Chemistry I	4(3-0-2) /5	Nil
2.	BPM-152	Linear Algebra, Transform Calculus and Numerical Methods	4(3-1-0)/4	Nil
3.	TEE-104	Basic Electrical Engineering	5(3-1-2) /6	Nil
4.	BHS-188	Industrial Sociology	3(3-0-0)/3	Nil
5.	TIT-121	Programming for Problem Solving	4(3-0-2) /5	Nil
6.	TWP-101	Work Programme	1(0-0-3)/3	Nil
7.	TEE-191	Practical Training I	02 Weeks	Nil
		Total Credits	22+21=43	

Second Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	TEE-201	Electrical Circuit Analysis	4(3-1-0)/4	Nil
2.	TEE-203	Measurements and Instrumentation	3(2-0-2)/4	Nil
3.	TEE-207	Electromagnetic Fields	4(3-1-0)/4	Nil
4.	TME-201	Engineering Mechanics	4(3-1-0)/4	Nil
5.	TEC-209	Signals and Systems	4(3-1-0)/4	Nil
6.	BHS-286	Effective Technical Communication	3(3-0-0)/3	Nil
7.	NSS-101	N.S.S.	1(0-0-4)	Nil
		II semester		
1.	TEE-202	Analog Electronics	4(3-0-2)/5	Nil
2.	TCT-202	Digital Electronics	4(3-0-2)/5	Nil
3.	TEE-206	Electrical Machines I	3(2-1-0)/3	Nil
4.	TEE-208	Microprocessors	4(3-0-2)/5	Nil
5.	TEE-209	Network analysis and synthesis	3(2-1-0)/3	Nil
6.	TEE-317	Software Tools for Electrical Engg Application	1(0-0-2)/2	Nil
7.	BHS-387	Soft Skills	3(3-0-0)/3	Nil
8.	NSS-102	N.S.S.	0(0-0-4)	Nil
9.	TEE-291	Practical Training II	02 Weeks	Nil
		Total Credits	23+22=45	

Third Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	TEE-314	Power Systems I	3(2-1-0)/3	Nil
2.	TEE-316	Control System I	4(3-0-2)/5	Nil
3.	TEE-311	Power Electronics	4(3-0-2)/5	Nil
4.	TEE-312	Electrical machines II	4(2-1-2)/5	Nil
5.	TEE-315	Elect. Materials	3(3-0-0)/3	Nil
6.	BPS-228	Probability and Statistics	4(3-1-0)/4	Nil
7.	NSS-201	N.S.S.	1(0-0-4)	Nil
		II semester		
1.	TEE-318	Power Systems II	3(3-0-0)/3	Nil
2.	TEC-304	Analog and Digital Communication	3(3-0-0)/3	Nil
3.	TEE-319	Electrical machines III	5(3-1-2)/6	Nil
4.		Open Elective 1	3 Credit	Nil
5.	TEE-	Programme Elective 1	3 Credit	Nil
6.	TEE-	Programme Elective 2	3 Credit	Nil
7.	TEE-320	Control System II	2(2-0-0)/2	Nil
8.	NSS-202	N.S.S.	0(0-0-4)	Nil
9.	TEE-391	Practical Training III	04 Weeks	Nil
		Total Credits	23+22=45	

Fourth Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	TEE-	Programme Elective 3	3 Credit	Nil
2.	TEE-	Programme Elective 4	3 Credit	Nil
3.	TEE-411	Renewable Energy Systems	3(3-0-0)/3	Nil
4.	TEE-410	Power System III	4(3-0-2)/5	Nil
5.	TEE-495 A	Project Stage I	4(0-0-4x2)/8	Nil
6.		Open Elective 2	3 Credit	Nil
7.	TEE-494	Seminar	1(0-0-2)/2	Nil
		II semester		
1.	TEE-	Programme Elective 5	3 Credit	Nil
2.	TEE-	Programme Elective 6	3 Credit	Nil
3.		Open Elective 3	3 Credit	Nil
4.		Open Elective 4	3 Credit	Nil
5.	TEE-495 B	Project Stage II	8(0-0-8x2)/16	Nil
		Total Credits	21+20=41	

TOTAL CREDITS = 174

Note: Those students who have not taken Hindi at the High School or equivalent level will also require to Register the course BHS-173 Elementary Hindi – 2 Credit

**PROPOSED GRADUATION REQUIREMENT FOR
B.TECH. (LATERAL ENTRY) ELECTRICAL ENGINEERING
Batch-2021**

Sl. No.	Course No.	Course Title	Credit/ Contact Hours	Pre-requisite
Basic Sciences and Other Department courses				
	TCT-202	Digital Electronics	4(3-0-2)/5	Nil
	TME-201	Engineering Mechanics	4(3-1-0)/4	Nil
	TEC-209	Signals and Systems	4(3-1-0)/4	Nil
	BPS-228	Probability and Statistics	4(3-1-0)/4	Nil
	BHS-286	Effective Technical Communication	3(3-0-0)/3	Nil
	BHS-387	Soft Skills	3(3-0-0)/3	Nil
	TEC-304	Analog and Digital Communication	3(3-0-0)/3	Nil
Professional Courses				
8.	TEE-201	Electrical Circuit Analysis	4(3-1-0)/4	Nil
9.	TEE-202	Analog Electronics	4(3-0-2)/5	Nil
10.	TEE-203	Measurements and Instrumentation	3(2-0-2)/4	Nil
11.	TEE-206	Electrical Machines I	3(2-1-0)/3	Nil
12.	TEE-207	Electromagnetic Fields	4(3-1-0)/4	Nil
13.	TEE-208	Microprocessors	4(3-0-2)/5	Nil
14.	TEE-209	Network Analysis and Synthesis	3(2-1-0)/3	Nil
15.	TEE-311	Power Electronics	4(3-0-2)/5	Nil
16.	TEE-312	Electrical machines II	4(2-1-2)/5	Nil
17.	TEE-314	Power Systems I	3(2-1-0)/3	Nil
18.	TEE-315	Electrical Materials	3(3-0-0)/3	Nil
19.	TEE-316	Control System I	4(3-0-2)/5	Nil
20.	TEE-317	Software Tools for Electrical Engineering Application	1(0-0-2)/2	Nil
21.	TEE-318	Power Systems II	3(3-0-0)/3	Nil
22.	TEE-319	Electrical machines III	5(3-1-2)/6	Nil
23.	TEE-320	Control System II	2(2-0-0)/2	Nil
24.	TEE-410	Power System III	4(3-0-2)/5	Nil
25.	TEE-411	Renewable Energy Systems	3(3-0-0)/3	Nil
26.	TEE-	Programme Elective 1	3 Credit	Nil
27.	TEE-	Programme Elective 2	3 Credit	Nil
28.	TEE-	Programme Elective 3	3 Credit	Nil
29.	TEE-	Programme Elective 4	3 Credit	Nil
30.	TEE-	Programme Elective 5	3 Credit	Nil
31.	TEE-	Programme Elective 6	3 Credit	Nil
32.		Open Elective 1	3 Credit	Nil
33.		Open Elective 2	3 Credit	Nil
34.		Open Elective 3	3 Credit	Nil
35.		Open Elective 4	3 Credit	Nil

Internship/ Seminar/ Projects and others.				
36.	TEE-291	Practical Training II	02 Weeks	Nil
37.	TEE-391	Practical Training III	04 Weeks	Nil
38.	TEE-494	Seminar	1(0-0-2)/2	Nil
39.	TEE-495 A	Project I	4(0-0-4x2)/8	Nil
40.	TEE-495 B	Project II	8(0-0-8x2)/16	Nil
41.	TWP-101	Work Programme	1(0-0-3)/3	Nil
42.	NSS-101/ NCC-101	N.S.S. / N.C.C.	1 (0-0-4)	Nil
43.	NSS-102/ NCC-102	N.S.S. / N.C.C.	0 (0-0-4)	Nil
44.	NSS-201/ NCC-201	N.S.S. / N.C.C.	1 (0-0-4)	Nil
45.	NSS-202/ NCC-202	N.S.S. / N.C.C.	0 (0-0-4)	Nil
		Total Credits	132	

Note: Those students who have not taken Hindi at the High School or equivalent level will also require to Register the course BHS-173 Elementary Hindi – 2 Credit

**PROPOSED GRADUATION REQUIREMENT FOR
B.TECH. (LATERAL ENTRY) ELECTRICAL ENGINEERING
Batch-2021
Semester Wise Distribution**

First Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	TEE-201	Electrical Circuit Analysis	4(3-1-0)/4	Nil
2.	TEE-203	Measurements and Instrumentation	3(2-0-2)/4	Nil
3.	TEE-207	Electromagnetic Fields	4(3-1-0)/4	Nil
4.	TME-201	Engineering Mechanics	4(3-1-0)/4	Nil
5.	TEC-209	Signals and Systems	4(3-1-0)/4	Nil
6.	BHS-286	Effective Technical Communication	3(3-0-0)/3	Nil
7.	TWP-101	Work Programme	1(0-0-3)/3	Nil
8.	NSS-101	N.S.S.	1(0-0-4)	Nil
		II semester		
1.	TEE-202	Analog Electronics	4(3-0-2)/5	Nil
2.	TCT-202	Digital Electronics	4(3-0-2)/5	Nil
3.	TEE-206	Electrical Machines I	3(2-1-0)/3	Nil
4.	TEE-208	Microprocessors	4(3-0-2)/5	Nil
5.	TEE-209	Network analysis and synthesis	3(2-1-0)/3	Nil
6.	TEE-317	Software Tools for Electrical Engg Application	1(0-0-2)/2	Nil
7.	BHS-387	Soft Skills	3(3-0-0)/3	Nil
8.	NSS-102	N.S.S.	0(0-0-4)	Nil
9.	TEE-291	Practical Training II	02 Weeks	Nil
		Total Credits	24+22=46	

Second Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	TEE-314	Power Systems I	3(2-1-0)/3	Nil
2.	TEE-316	Control System I	4(3-0-2)/5	Nil
3.	TEE-311	Power Electronics	4(3-0-2)/5	Nil
4.	TEE-312	Electrical machines II	4(2-1-2)/5	Nil
5.	TEE-315	Elect. Materials	3(3-0-0)/3	Nil
6.	BPS-228	Probability and Statistics	4(3-1-0)/4	Nil
7.	NSS-201	N.S.S.	1(0-0-4)	Nil
		II semester		
1.	TEE-318	Power Systems II	3(3-0-0)/3	Nil
2.	TEC-304	Analog and Digital Communication	3(3-0-0)/3	Nil
3.	TEE-319	Electrical machines III	5(3-1-2)/6	Nil
4.		Open Elective 1	3 Credit	Nil
5.	TEE-	Programme Elective 1	3 Credit	Nil
6.	TEE-	Programme Elective 2	3 Credit	Nil
7.	TEE-320	Control System II	2(2-0-0)/2	Nil
8.	NSS-202	N.S.S.	0(0-0-4)	Nil
9.	TEE-391	Practical Training III	04 Weeks	Nil
		Total Credits	23+22=45	

Third Year:

Sl. No.	Course No.	Course Title	Credit & Contact Hours	Pre-requisite
		I semester		
1.	TEE-	Programme Elective 3	3 Credit	Nil
2.	TEE-	Programme Elective 4	3 Credit	Nil
3.	TEE-411	Renewable Energy Systems	3(3-0-0)/3	Nil
4.	TEE-410	Power System III	4(3-0-2)/5	Nil
5.	TEE-495 A	Project Stage I	4(0-0-4x2)/8	Nil
6.		Open Elective 2	3 Credit	Nil
7.	TEE-494	Seminar	1(0-0-2)/2	Nil
		II semester		
1.	TEE-	Programme Elective 5	3 Credit	Nil
2.	TEE-	Programme Elective 6	3 Credit	Nil
3.		Open Elective 3	3 Credit	Nil
4.		Open Elective 4	3 Credit	Nil
5.	TEE-495 B	Project Stage II	8(0-0-8x2)/16	Nil
		Total Credits	21+20=41	

TOTAL CREDITS = 132

Note: Those students who have not taken Hindi at the High School or equivalent level will also require to Register the course BHS-173 Elementary Hindi – 2 Credit

ELECTIVE COURSES

Sl. No.	Course No.	Course Title	L-T-P	Credits
1	TEE-401	Soft Computing and Its Engineering Applications	3-0-0	3
2	TEE-402	Renewable Energy: Concepts and Practices	3-0-0	3
3	TEE-403	Utilization of Electrical Energy,	3-0-0	3
4	TEE-404	Concepts of Electrical Power System	3-0-0	3
5	TEE-429	Electrical Drives	2-1-0	3
6	TEE-430	Digital Control System	3-0-0	3
7	TEE-440	Line Commutated and Active Rectifiers	3-0-0	3
8	TEE-442	Artificial Neural Networks and Fuzzy Systems for Electrical Engineers,	2-0-2	3
9	TEE-443	Power Quality & FACTS	3-0-0	3
10	TEE-444	Electrical Machine Design	3-0-0	3
11	TEE-445	Power System Protection	3-0-0	3
12	TEE-446	HVDC Transmission Systems	3-0-0	3
13	TEE-447	Electrical Energy Conservation and Auditing	3-0-0	3
14	TEE-448	Industrial Electrical Systems	3-0-0	3
15	TEE-449	Power System Dynamics and Control	3-0-0	3
16	TEE-450	High Voltage Engineering	3-0-0	3
17	TEE-451	Advance Electric Drives	3-0-0	3
18	TEE-452	Digital Signal Processing	3-0-0	3
19	TEE-453	Electrical and Hybrid Vehicles	3-0-0	3
20	TEE-454	Electromagnetic waves	3-0-0	3

Note: Elective Courses at Sl. No. 1 to 4 are for students of other branches except Electrical Engineering.